

# Anal Carcinoma

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CARCINOMA ARISING in the ano-rectal junction and anus is the least common major malignant lesion derived from the epithelial elements of the gastrointestinal tract.<sup>4</sup> Pack,<sup>8</sup> after an extensive study of anal and rectal neoplasia, also concluded that epithelioma in this region was comparatively rare, with an incidence of 2 to 4 per cent. Lynch,<sup>7</sup> in a review of 491 cases of cancer of the rectum and pelvic colon, reported 15 cases of epithelioma, an incidence of 3 per cent. Hankins and Harding<sup>3</sup> found these lesions to make up 1 per cent of all primary new growths found in the gastrointestinal tract and approximately 3 per cent of carcinomas arising in the large bowel.

Our decision to review the subject of anal carcinomas was brought about by a recent spate of tumors reported as "transitional cell carcinomas." This paper is concerned with a review of the subject and a study of all private patients coming under our care during the past ten years who had carcinoma of the large bowel, rectum and anus. There were 148 cases, seven of them carcinoma of the anus, an incidence of approximately 1.5 per cent of the colo-rectal group.

## Types

The multiplicity of names applied to tumors of the anus is confusing. They have been classed separately as squamous cell carcinoma, basal cell carcinoma, basaloid carcinoma, acanthoma of the anus, epidermoid carcinoma of the anus, cloacogenic carcinoma and transitional cell carcinoma. It is not at all surprising to find this array of names for this tumor in the light of the now accepted origin of some of these tumors from the modified epithelium (transitional) of the intermediate zone which separates the columnar epithelium of the rectum from the squamous cell epithelium of the anal canal. This zone can be identified both grossly and microscopically and varies in length from 3 mm. to 1 cm. and can be quite readily seen with the naked eye as the area marked by a circular zone corresponding to the columns and sinuses of Morgagni and terminating at the level of the anal valves. It represents a persistent remnant of the cloaca of the embryo. The first reference to this important area was made by Herrmann and DesFosses<sup>5</sup> in 1880.

• Carcinoma of the anus is a rare tumor when skin tumors which may have arisen from the perianal skin are excluded. A significant proportion of anal carcinomas, exclusive of those from perianal skin, may very well have their origin from the intermediate zone of transitional epithelium and its anal ducts, which would account for the different histological patterns presented by these cancers. These tumors are frequently described as of low grade malignancy and indeed some of them may be; but, the majority behave as very aggressive carcinomas, capable not only of rapid and extensive local invasion but also capable of lymph node metastasis. The treatment should be surgical and aggressive if operation is feasible.

Tucker and Helwig<sup>11</sup> in 1935 again called attention to this zone and to the fact that the rectal mucosa does not join directly with the epidermis of the anal canal.

More recently, Grinvalsky and Helwig<sup>2</sup> said, "Inasmuch as carcinomas of the ano-rectal junction have histological patterns that relate them to the embryological remnant of the cloaca, we propose the term *transitional cloacogenic carcinoma* as the appropriate designation of these tumors." As was shown by these investigators, this circular zone represents a remnant of embryologic cloaca, with mucosa histologically similar to that of urethra and bladder. Approximately eight anal ducts from the vestigial anal glands empty into this zone. These ducts are lined proximally with transitional type epithelium which becomes cuboidal and often squamous in the deeper portions.

If this thesis can be accepted (and present evidence certainly points toward this conclusion), then some of these anal tumors, with various histological patterns, can be assumed to have their origin from the circular zone so well described by Grinvalsky and Helwig, which would explain the presence of tumors containing transitional type cells, basal or basaloid type cells and even squamous type carcinomas. Occasionally the tumors are found to show a single cell type but more often a mixture of types. This is easily explained on the basis of their origin from the embryonic cloaca and the anal ducts.

## Predisposing Causes

Little is known about the etiology of carcinoma of the anus. However, Rosser,<sup>9</sup> in a study of the

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TABLE 1.—Summary of Data on Seven Cases of Anal Carcinoma

Case	Sex	Age	First Symptom	Treatment	Year	Cell Type	Survival
1.	F	42	Bleeding at stool.....	C.A.P.*.....	1957	Squamous	7 years
2.	F	38	Bleeding piles.....	C.A.P.....	1955	Squamous	6 years
3.	F	50	Constipation.....	C.A.P.....	1956	Squamous	5 years
4.	F	46	Constipation.....	C.A.P.....	1956	Squamous	1 year, then died
5.	F	53	Bleeding.....	Exenteration.....	1957	Squamous	Died of disease 11 months
6.	F	70	Rectal bleeding.....	C.A.P.....	1960	Transitional	Living and well 1 year
7.	F	50	Rectal bleeding.....	C.A.P.....	1961	Transitional	Living and well 1 month

\*C.A.P. = Combined abdomino-perineal resection.

relationship of chronic inflammatory lesions of the rectum to neoplasia, described three microscopically proven epidermoid carcinomas of the anus. It is of interest that one patient in our series (Case 4, Table 1) had a 15-year history of multiple rectal infections, principally fistulae. Another patient (Case 5), a 53-year-old woman had a history of heavy irradiation for carcinoma of the cervix given ten years before treatment for anal carcinoma. Pronounced atrophy and prominent telangiectasia in the adjacent skin resulted. A third patient (Case 3) 50 years of age when first seen with anal carcinoma, gave a history of having had colostomy for "rectal stenosis" which had been variously diagnosed as lymphopathia venereum and tuberculosis. For approximately three years she had defecated from an artificial anus. It had then been closed and bowel function restored some 11 or 12 years before the development of the malignant lesion of the anus. Features of these three cases further suggest chronic infection and irritation as a contributing factor to the development of malignancy in this area.

#### Sex Incidence

A predominance of women in most reported series of anal carcinoma has been commented upon by several authors. The usual ratio given is three women to one man. In this series all the seven patients were women. The youngest was 38 years of age and the oldest 70.

#### Symptoms

The symptoms of carcinoma of the anus vary with the two clinical types of tumor, exophytic and endophytic. Tumors of the exophytic type are visible and can be palpated as a mass by the patient; the endophytic occur high in the anal canal.

The exophytic lesions make themselves known to the patient by the presence of a palpable or visible growth, and in most instances they are associated with bleeding at stool. Those of the endophytic type usually come to notice through rectal bleeding. Pain and tenesmus are frequent accompanying symptoms.

#### Treatment

All seven patients were treated by radical operation—combined abdomino-perineal resection with

very wide resection of perianal skin, total removal of the contents of the ischiorectal fossa and near total excision of the levator ani muscles. The perineum and posterior vaginal wall were usually removed; in addition in one case the coccygeal segment posteriorly also was removed. Buxton<sup>1</sup> emphasized how frequently the vaginal wall is involved. In one case total pelvic exenteration and construction of a substitute ileal bladder were carried out because of extension forward into the vagina and bladder.

Inguinal lymph node dissection enters into every discussion of the treatment of this tumor. The policy we have arbitrarily followed during the past ten years is not to do inguinal lymph node dissection prophylactically. If there is evidence of clinical control of the primary tumor, then prompt radical inguinal lymphadenectomy would be done when clinical evidence of involvement occurs later. Fortunately, none of the seven cases needed this additional operation. Stearns<sup>10</sup> questioned the value of prophylactic groin dissection on practical grounds. In his series, the salvage rate was quite low.

#### Results

At the time of this report, one patient had been alive seven years after operation, another six years and another five years without clinical evidence of recurrent disease. Two patients are dead, one a 46-year-old woman with severe diabetes and arteriosclerosis who died of concomitant disease one year after operation but without recurrence of the neoplasm as proven by postmortem examination. The second patient who died was the 53-year-old woman in whom exenteration was done. This patient did extremely well and had excellent palliation until approximately six weeks before her death, which was brought about by extensive intraperitoneal and visceral metastasis. In the two remaining cases in this series only a short time had elapsed between operation and the preparation of this report.

We are persuaded that this disease can be controlled effectively only by thorough surgical extirpation. We have carefully avoided local excisions or half-hearted surgical intervention.

In our two most recent cases, in both of which the lesions were of the endophytic type and were

situated high in the anal canal, the tumors were classified by the pathologist as "transitional cell type, characteristic of cloacogenic carcinoma." Lone, Berg and Stearns<sup>6</sup> noted that "basoloid" histological characteristics were associated with relatively favorable prognosis. In their series, 40 per cent of patients with tumors having basaloid foci were living and well at five years, compared with 27 per cent of patients with tumors that did not have basaloid characteristic.

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